

REMARKS

Claims 1-7 and 9-22, 24 and 25 are pending.

I. Claim Amendment

The Office Action states that claims 1 and 25 “require the coating composition to have ‘a reactive part,’ which is an unspecified portion of the whole.” Of that reactive part, the Office Action continues, less than or equal to 30% must be a component wherein an amount must be a material with a minimum of three functional groups, having at least three acrylate groups. In response, claims 1 and 25 have been amended to recite “comprising at least 30% by weight multi-functional component, said multi-functional component consisting of at least one material, at least one component of said at least one material having at least three functional acrylate groups,” and furthermore that “said coating composition being photo-initiator free.”

II. 35 USC § 103

Claims 1-7, 9-22, 23-25 stand rejected under 35 USC § 103(a) as allegedly being unpatentable over Ouder Kirk et al. (U.S. Patent No. 4,902,387), alone or in view of Bilkadi et al. (U.S. Patent No. 5,633,049) and Sasaki et al. (U.S. Patent No. 4,689,243), and optionally in further view of Jonssen et al. (U.S. Patent No. 5,446,073).

A. Ouder Kirk et al. in view of Bilkadi et al.

The Office Action asserts Ouder Kirk et al. teaches each feature recited by the claims, except for the particular materials recited, for which purpose Bilkadi et al. is cited.

Ouder Kirk et al. is concerned with reducing the amount of migration of plasticizers from a polymer such as PVC coated with a barrier film. The reduction of migration is obtained by treating the polymer with an excimer laser. The polymer is thereafter treated with a coating as further protection. The coating may be a polyurethane or polyacrylate film. The Office Action refers to Example 1 and considers that the application of a photoinitiator (benzophenone) in isopropanol followed by the application of a wet coating of a triacrylate monomer does not constitute art application of a coating comprising a photoinitiator. However, the expression in the present claim 1 “applying a coating composition” results in a coating composition which is

achieved on the substrate, whether the coating composition is achieved by first mixing the components of the composition and thereafter applying them to the substrate or by applying one or several layers of different components which result in a coating after application on the substrate. In Ouderkirk et al., there is no drying step between the application of the solution of benzophenone and the application of the wet coating of trimethylol propane triacrylate monomer. The latter component further includes a surfactant so as to more easily mix with the first component. Thus, the described coating contains a photoinitiator.

The Office Action further refers to the UV radiation of 200 watts and asserts that this could lead to the power output of at least 140 watts per linear centimeter given in the present claim 1 via routine experimentation. However, Ouderkirk et al. describes the irradiation of a material comprising a photoinitiator. It would therefore be difficult to draw any conclusion from a statement to the effect of a lamp given in this document on the coating composition of this reference because the claimed coating composition does not contain a photoinitiator. Further, the Office Action maintains that the details of the lamp of Ouderkirk et al. would of course be depending on area to be treated. Looking at the area treated according to Ouderkirk et al., it is at least 5 cm by 5 cm as such samples are cut from the coated films. As a result, the power per linear cm is less than 40 watts ($200 \text{ watts} / 5 \text{ cm} = 40 \text{ w/cm}$), i.e., significantly lower than the power output recited by the present claims.

Therefore, the process of Ouderkirk et al. uses a photoinitiator, and does not use a UV lamp of the power output as recited by the present claims. Further, the method of the reference does not discuss any special properties of the coating. The coating is applied only to further decrease the migration of plasticizer after the substrate has been treated with an excimer laser.

The Office Action asserts states Bilkadi et al. describes the curing of multifunctional acrylates. However, the coating composition of Bilkadi et al. is not the same as that of the invention. According to Bilkadi et al., it is necessary to include an acrylamide compound in the composition. Further, the use of a photoinitiator is not optional as indicated by the Examiner in col. 9, lines 18-19, it is stated "If the energy source is heat, ultraviolet light of visible light, an initiator is required" (emphasis added). Thus, since the composition of Bilkadi et al. requires a photoinitiator it cannot not describe nor be used to suggest a coating which is photoinitiator-free and is cured by UV-light.

Thus, the combination of Ouderkirk et al. and Bikadi et al would certainly not lead one of ordinary skill in the art to eliminate a component taught to be necessary to the compositions discussed therein. Similarly, as Jonssen et al. fails to cure the deficiencies of Ouderkirk et al. and Bilkadi et al.

C. Sasaki et al.

The Office Action asserts Sasaki teaches each feature of the rejected claims, except for the specific parameters and UV sources for the UV curing, for which purpose Bilkadi et al is cited. However, Applicants respectfully present that the compositions of Sasaki et al also require a photoinitiator.

Although Sasaki et al. states that the compositions “preferably” include a photoinitiator, all of the examples discussed therein do include such a component. Thus, this reference fails to adequately describe and enable a composition without a photoinitiator.

Moreover, Sasaki et al. describes a heat-resistant molded article having a cured surface film made from a resin material containing 30 % or more of one or more monomers having at least three (meth)acryloyloxy groups. The film is cured using active energy rays. When ultraviolet rays are used it is preferable to add a photoinitiator and/or a photosensitizer.

Sasaki does not give any details concerning the light or wavelengths used except to state in the examples that a high pressure mercury lamp is used. In all examples a photoinitiator is present, benzoin ethyl ether in examples 1 and 6 and 2-hydroxy-2-methyl-1-phenylpropane-1-one in example 3. Thus, although it is stated in column 9, lines 10-11 that the use of a photoinitiator and/or a photosensitizer is only preferable, Sasaki does not describe any coating which can be cured without such an additive.

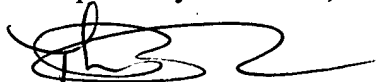
Thus, the addition of the teachings of Bilkadi et al. and Jonssen et al. would not result in the presently recited invention.

Reconsideration is therefore requested.

III. Conclusion

In view of the foregoing remarks and analysis, it is respectfully submitted the claims now pending in the application comply with all statutory requirements, and are presently in condition for immediate allowance. Thus, entry of the above-amendments and passage of this application to allowance is respectfully requested.

Respectfully submitted,



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